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Jeff Beno

12/Brief 103  
8/15/04  
**PATENT**  
Atty. Docket No. 35512-35

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

G. MICHAEL PHILLIPS, ET AL.

Serial No.: 09/615,026

Filed: July 13, 2000

For: SIGNIFICANCE-BASED DISPLAY

Group Art Unit: 2676

Examiner: Rahmjoo, Manucher

**APPELLANTS' BRIEF  
ON APPEAL TO THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
PO Box 1450  
Alexandria, Virginia 22313-1450

Dear Sir:

Appellants in the above-captioned patent application appeal the final rejection of claims 1 to 22 set forth in the Office Action mailed January 28, 2004, a Notice of Appeal having been filed on April 28, 2004, and a Petition for One-Month Extension of Time having been filed on July 26, 2004.

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### **I. REAL PARTY IN INTEREST**

The real party in interest in this application is c4cast.com, Inc., pursuant to an assignment recorded on July 13, 2000, at reel 010975, frame 0302.

### **II. RELATED APPEALS AND INTERFERENCES**

Appellants are not aware of any related appeals or interferences.

### **III. STATUS OF CLAIMS**

Claims 1 to 22 have been finally rejected and are the subject matter of this appeal. In accordance with 37 C.F.R. § 1.192(c)(9), a copy of the claims involved in this appeal is included in Appendix A attached hereto.

### **IV. STATUS OF THE AMENDMENTS**

An Amendment was filed on July 26, 2004, in order to correct claims 14-17 to depend from independent claim 12, rather than from independent claim 1. This correction was necessary to resolve an antecedent basis problem that previously had not been discovered. Appellants have not yet received an Office Action in response to this Amendment. The claims in Appendix A hereto incorporate these changes, and the discussion below assumes that such claim amendments have been entered.

### **V. SUMMARY OF THE INVENTION**

The present invention concerns methods, apparatuses and techniques for displaying data having different statistical significances. Initially, estimated data values, and a calculated measure of statistical significance for each, are obtained. As noted in

the Specification, these measures of statistical significance may be, for example, a sensitivity-based or elasticity-based measure (see page 2, lines 7-8; page 23, lines 1-4; and page 24, lines 30-34), a standard deviation, variance, correlation coefficient, and/or any function of the foregoing (see page 26, lines 4-6). There are a variety of conventional techniques for calculating a measure of statistical significance for one or more estimated data values.

However, one significant difference between the present invention and the prior art is the way in which such statistical significances are communicated to an end user. The present invention displays each of a plurality of estimated data values using a display characteristic that is a function of the data value's statistical significance. See, e.g., page 24, line 8 to page 26, line 31 in the Specification. Thus, for example, a graph might be produced with each such estimated data value being displayed at an intensity level that is a function of the statistical significance for that data point. *Id.* For instance, estimates having a high statistical significance might be displayed more brightly than estimates having a lower statistical significance. *Id.* In this way, end users often will be able to easily distinguish the more significant points from the less significant points on a displayed (or otherwise provided) graph.

## **VI. ISSUES PRESENTED ON APPEAL**

The issues are whether: claims 1 and 3-22 are properly rejected under 35 USC § 103(a) over selected pages from a publication by Harvard Graphics ("Harvard Graphics") in view of U.S. Patent 5,857,462 ("Thomas"); and claim 2 is properly rejected under § 103(a) over Harvard Graphics.

## **VII. GROUPING OF THE CLAIMS**

In the Office Action, the Examiner grouped the pending claims in a particular manner. However, for purposes of the present appeal, Appellants believe that the claims are more appropriately grouped as follows:

GROUP 1: Claims 1, 6-9, 18, 19 and 21

GROUP 2: Claims 12, 20 and 22

GROUP 3: Claim 2

GROUP 4: Claim 3

GROUP 5: Claim 4

GROUP 6: Claim 5

GROUP 7: Claims 10 and 11

GROUP 8: Claim 13

GROUP 9: Claim 14

GROUP 10: Claim 15

GROUP 11: Claim 16

GROUP 12: Claim 17

It is therefore Appellants' intent that, solely for purposes of the specific rejections in the present Appeal and for refuting the specific arguments set forth by the Examiner, the claims in each of the foregoing groups will stand or fall together.

## **VIII. ARGUMENT**

### **Discussion Of Issues On Appeal**

The requirements for establishing a prima facie case of a § 103 rejection have been stated as follows.

"a proper analysis under § 103 requires, *inter alia*, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, those of ordinary skill would have a reasonable expectation of success. [citing In re Dow Chemical Co., 837 F.2d 469, 473, 5 U.S.P.Q.2D 1529, 1531 (Fed. Cir. 1988).] Both the suggestion and the reasonable expectation of success must be found in the prior art, not in the applicant's disclosure."

In re Vaeck, 947 F.2d 488, 493 (Fed. Cir. 1991).

Thus, MPEP § 2142 requires that in order to establish a prima facie case of obviousness, the Examiner must cite prior art references that teach or suggest all of the claim limitations and, if more than one such reference is required to disclose all such limitations, there must be some suggestion or motivation, either in the prior art references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the reference teachings.

With regard to motivation to combine prior art teachings, the Federal Circuit has held as follows:

"This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher." [citation omitted]

In re Lee, 277 F.3d 1338, 1343-44 (2002).

As discussed below, the foregoing requirements for establishing a prima facie case of obviousness have not been met for any of the following groups of claims.

### **Group 1 Claims**

Independent claims 1, 19 and 21 are directed to the display of information, in which one obtains a plurality of estimated data values, together with a calculated

measure of statistical significance for each. Then, a graph of such plurality of estimated data values is displayed, with each such estimated data value being displayed at an intensity level that is a function of its calculated measure of statistical significance.

The foregoing combination of features is not disclosed or suggested by the applied art. In particular, the applied art does not disclose or suggest at least the feature of displaying a graph of a plurality of estimated data values, with the display intensity of each such estimated data value being a function of a measure of statistical significance calculated for it.

In this regard, the Examiner has cited a combination of Harvard Graphics, which concerns a software program for generating charts and graphs, and Thomas, which concerns wavelength selection for multivariate spectral analysis. These references are from two significantly different areas of technology and, as will become apparent below, this observation is important with respect to motivation to combine. Initially, however, the following discussion will focus on what the references teach, and what they do not.

The Examiner primarily relies upon page 11-33 of Harvard Graphics, which page illustrates a bar graph having a pair of bars for each calendar year in the period of time covered by the graph. Each such pair includes a bar indicating the actual sales volume for the year and a bar indicating the projected sales volume for the year, with all of the "projected" bars displayed in one manner and all of the "actual" bars displayed in another.

As acknowledged by the Examiner, Harvard Graphics does not say anything at all about obtaining a calculated measure of statistical significance for any of the displayed values. Accordingly, Harvard Graphics clearly could not have said anything

Harvard → projected & actual  
vs.  
Thomas → known & unknown  
different intensities

about having any display characteristic be a function of such a measure. Rather, in Harvard Graphics the display of each bar is only a function of the following factors: (i) the year to which the corresponding data value applies (which is represented by horizontal position); (ii) the data value itself, i.e., a dollar amount of sales volume (which is represented by the height of the bar); and (iii) whether the data value is the actual sales volume for the year or the projected sales volume for the year (which is represented by a display characteristic and also by relative horizontal position, with the projected value to the left of the actual value for each calendar year).

In order to address the undisputed fact that Harvard Graphics says nothing at all about basing <sup>not claimed.</sup> any display characteristic on any calculated measure of statistical significance, the Examiner cites Thomas. Specifically, the Examiner asserts that Thomas teaches a step of obtaining a calculated measure of statistical significance for each of a plurality of data values.

However, the portion of Thomas cited by the Examiner for this assertion (column 15 lines 25-61) has been studied in particular detail, and is not seen to say anything about obtaining a calculated measure of statistical significance. Rather, as noted by the Examiner, that portion of Thomas instead discloses a technique for determining one or more unknown values of a particular characteristic. Specifically, those unknown values are determined by creating and then using a model that is based on a set of samples with known values for that characteristic.

Moreover, even if Thomas actually taught a step of obtaining calculated measures of statistical significance (which in any event admittedly is within the prior art), that knowledge alone would not have been sufficient to reach a conclusion that the

present invention would have been obvious. Rather, the present claims recite a specific use of a calculated measure of statistical significance for display purposes, and Thomas clearly does not disclose or suggest at least this feature of the invention. In fact, the Examiner has not even alleged that Thomas says anything about basing a display characteristic on a calculated measure of statistical significance.

The points set forth above previously have been presented to the Examiner. In response, the Examiner (in the current, final Office Action) simply again emphasizes the determination of unknown values for a particular characteristic using a set of data having known values for that characteristic, and then concludes as follows:

As such stated above, it is clear that the connection between actual (known) and projected (unknown) data values can be firmly established, and it would further motivate one of ordinary skill in the art at the time the invention was made to establish calculated measure of statistical significance from an estimated data value or vice versa for improvement purposes as per abstract in Thomas et al.

It is unclear to Appellants how this statement relates to the subject claim limitation, as it says nothing at all about altering any display characteristic based upon a calculated measure of statistical significance. The only relevant display distinction in either applied reference is Harvard Graphics' display of projected values vs. actual values, apparently in different colors. As noted above, the cited references provide no suggestion to base any display characteristic on a calculated measure of statistical significance. In Harvard Graphics, all of the "projected" data values apparently are displayed in exactly the same manner, and all of the "actual" data values are displayed in exactly the same manner. Moreover, there clearly would have been no motivation to obtain a calculated measure of statistical significance for the "actual" data values, given that those values presumably are known precisely.

The Examiner simply may be arguing that Harvard Graphics discloses the feature of displaying data differently based on presumed differences in statistical significances, i.e., projected values (which may have significant uncertainty) vs. actual data values (which generally are known fairly accurately). However, that simple case previously was distinguished when Appellants amended the claims to recite that each estimated data value is displayed at an intensity level that is a function of the calculated measure of statistical significance for such estimated data value.

In short, neither Harvard Graphics, Thomas, nor any combination of the two would have suggested the present invention's display technique of: displaying a graph of a plurality of estimated data values, with the display intensity of each such estimated data value being a function of a measure of statistical significance calculated for it. Lacking any disclosure or teaching regarding at least this feature of the invention, a *prima facie* case of obviousness under MPEP § 2141 cannot be said to have been established. On this basis alone, the present rejections should be reversed.

It is noted that the recited use of different intensities to distinguish different calculated measures of statistical significance is particularly useful, in that generally it can provide a very intuitive and easy-to-comprehend visual cue regarding statistical significance. For example, statistically insignificant data points can be displayed faintly while highly significant data points can be displayed very brightly.

In addition to lacking the necessary teachings, for reasons similar to those set forth above, there would have been no motivation to combine Harvard Graphics and Thomas as suggested by the Examiner. That is, there appears to be no suggestion in Harvard Graphics to utilize its display techniques in any manner in connection with a

calculated measure of statistical significance. In addition, there appears to be no suggestion in Thomas to modify any of Harvard Graphics' displays, such as the display shown on page 11-33 of Harvard Graphics, so that the intensity of each data value is based on a calculated measure of statistical significance for such data value.

The Examiner asserts that it would have been obvious to combine these two significantly different references "to determine the known characteristics, for use by an algorithm wherein the selection of wavelength subsets improves the model's fitness of the determination for the unknown values of the known characteristics see for example the abstract." However, the Examiner provides no indication: (i) what this statement means in the context of the present invention, (ii) how the stated objective relates in any way to Harvard Graphics, or (iii) how such a statement (if true) would have motivated one of ordinary skill in the art to have combined Harvard Graphics and Thomas in order to provide the present display feature.

To the contrary, Harvard Graphics and Thomas are significantly different references, concerning significantly different technology, and nothing in either one appears to suggest the desirability of incorporating or combining the teachings of the other. In the present case, the only motivation to combine the subject references in any manner would have been found in Appellants' own disclosure, which of course is improper under the holdings of In re Vaeck and In re Lee, *supra*.

As set forth above, even if one attempted to combine Harvard Graphics and Thomas, such a combination still would not have resulted in the present invention because such references, both singly and in combination, lack any teaching with respect to the above-referenced feature of the invention.

Accordingly, independent claims 1, 19 and 21, together with their dependent claims 6-9 and 18, are believed to be allowable over the applied art.

### **Group 2 Claims**

Independent claims 12, 20 and 22 are directed to the display of information, in which one obtains a plurality of estimated data values, together with a calculated measure of statistical significance for each. Then, a graph of such plurality of estimated data values is displayed, with a display characteristic of each being a function of its calculated measure of statistical significance.

The foregoing combinations of features are not believed to be disclosed or suggested by the applied art. In particular, the applied art does not appear to disclose or to suggest at least the feature of displaying a graph of a plurality of estimated data values, with a display characteristic of each such estimated data value being a function of a measure of statistical significance calculated for it.

In this regard, the Examiner has cited a combination of Harvard Graphics, which concerns a software program for generating charts and graphs, and Thomas, which concerns wavelength selection for multivariate spectral analysis. These references are from two significantly different areas of technology and, as will become apparent below, this observation is important with respect to motivation to combine. Initially, however, the following discussion will focus on what the references teach, and what they do not.

The Examiner primarily relies upon page 11-33 of Harvard Graphics, which page illustrates a bar graph having a pair of bars for each calendar year in the period of time covered by the graph. Each such pair includes a bar indicating the actual sales volume for the year and a bar indicating the projected sales volume for the year, with all of the

“projected” bars displayed in one manner and all of the “actual” bars displayed in another.

As acknowledged by the Examiner, Harvard Graphics does not say anything at all about obtaining a calculated measure of statistical significance for any of the displayed values. Accordingly, Harvard Graphics clearly could not have said anything about having any display characteristic be a function of such a measure. Rather, in Harvard Graphics the display of each bar is only a function of the following factors: (i) the year to which the corresponding data value applies (which is represented by horizontal position); (ii) the data value itself, i.e., a dollar amount of sales volume (which is represented by the height of the bar); and (iii) whether the data value is the actual sales volume for the year or the projected sales volume for the year (which is represented by a display characteristic and also by relative horizontal position, with the projected value to the left of the actual value for each calendar year).

In order to address the undisputed fact that Harvard Graphics says nothing at all about basing any display characteristic on any calculated measure of statistical significance, the Examiner cites Thomas. Specifically, the Examiner asserts that Thomas teaches a step of obtaining a calculated measure of statistical significance for each of a plurality of data values.

However, the portion of Thomas cited by the Examiner for this assertion (column 15 lines 25-61) has been studied in particular detail, and is not seen to say anything about obtaining a calculated measure of statistical significance. Rather, as noted by the Examiner, that portion of Thomas instead discloses a technique for determining one or more unknown values of a particular characteristic. Specifically, those unknown values

are determined by creating and then using a model that is based on a set of samples with known values for that characteristic.

Moreover, even if Thomas actually taught a step of obtaining calculated measures of statistical significance (which in any event admittedly is within the prior art), that knowledge alone would not have been sufficient to reach a conclusion that the present invention would have been obvious. Rather, the present claims recite a specific use of a calculated measure of statistical significance for display purposes, and Thomas clearly does not disclose or suggest at least this feature of the invention. In fact, the Examiner has not even alleged that Thomas says anything about basing a display characteristic on a calculated measure of statistical significance.

The points set forth above previously have been presented to the Examiner. In response, the Examiner (in the current, final Office Action) simply again emphasizes the determination of unknown values for a particular characteristic using a set of data having known values for that characteristic, and then concludes as follows:

As such stated above, it is clear that the connection between actual (known) and projected (unknown) data values can be firmly established, and it would further motivate one of ordinary skill in the art at the time the invention was made to establish calculated measure of statistical significance from an estimated data value or vice versa for improvement purposes as per abstract in Thomas et al.

It is unclear to Appellants how this statement relates to the subject claim limitation, as it says nothing at all about altering any display characteristic based upon a calculated measure of statistical significance. The only relevant display distinction in either applied reference is Harvard Graphics' display of projected values vs. actual values, apparently in different colors. As noted above, the cited references provide no suggestion to base any display characteristic on a calculated measure of statistical

significance. In Harvard Graphics, all of the “projected” data values apparently are displayed in exactly the same manner, and all of the “actual” data values are displayed in exactly the same manner. Moreover, there clearly would have been no motivation to obtain a calculated measure of statistical significance for the “actual” data values, given that those values presumably are known precisely.

The Examiner simply may be arguing that Harvard Graphics discloses the feature of displaying data differently based on presumed differences in statistical significances, i.e., projected values (which may have significant uncertainty) vs. actual data values (which generally are known fairly accurately). However, that simple case previously was distinguished when Appellants amended the claims to recite that each estimated data value is displayed using a display characteristic that is a function of the calculated measure of statistical significance for such estimated data value.

In short, neither Harvard Graphics, Thomas, nor any combination of the two would have suggested the present invention's display technique of: displaying a graph of a plurality of estimated data values, with a display characteristic of each such estimated data value being a function of a measure of statistical significance calculated for it. Lacking any disclosure or teaching regarding at least this feature of the invention, a *prima facie* case of obviousness under MPEP § 2141 cannot be said to have been established. On this basis alone, the present rejections should be reversed.

In addition to lacking the necessary teachings, for reasons similar to those set forth above, there would have been no motivation to combine Harvard Graphics and Thomas as suggested by the Examiner. That is, there appears to be no suggestion in Harvard Graphics to utilize its display techniques in any manner in connection with a

calculated measure of statistical significance. In addition, there appears to be no suggestion in Thomas to modify any of Harvard Graphics' displays, such as the display shown on page 11-33 of Harvard Graphics, so that a display characteristic of each data value is based on a calculated measure of statistical significance for such data value.

The Examiner asserts that it would have been obvious to combine these two significantly different references "to determine the known characteristics, for use by an algorithm wherein the selection of wavelength subsets improves the model's fitness of the determination for the unknown values of the known characteristics see for example the abstract." However, the Examiner provides no indication: (i) what this statement means in the context of the present invention, (ii) how the stated objective relates in any way to Harvard Graphics, or (iii) how such a statement (if true) would have motivated one of ordinary skill in the art to have combined Harvard Graphics and Thomas in order to provide the present display feature.

To the contrary, Harvard Graphics and Thomas are significantly different references, concerning significantly different technology, and nothing in either one appears to suggest the desirability of incorporating or combining the teachings of the other. In the present case, the only motivation to combine the subject references in any manner would have been found in Appellants' own disclosure, which of course is improper under the holdings of In re Vaeck and In re Lee, *supra*.

As set forth above, even if one attempted to combine Harvard Graphics and Thomas, such a combination still would not have resulted in the present invention because such references, both singly and in combination, lack any teaching with respect to the above-referenced feature of the invention.

Accordingly, independent claims 12, 20 and 22 are believed to be allowable over the applied art.

### **Group 3 Claim**

Claim 2 depends from claim 1 (in Group 1) and recites the further limitation that each estimated data value pertains to an asset and comprises a measure of a tendency of the asset's value to change as a result of a change in a data value for an exogenous variable. This additional feature of the invention is not disclosed or suggested by the applied art.

Acknowledging that Harvard Graphics does not disclose this feature, the Examiner then goes on to assert that such a feature would have been obvious in view of Harvard Graphics because Harvard Graphics "teaches the actual and projected sales as assets," and because "It would be obvious to one of ordinary [skill] in the art that the projected sales [encompasses] many variables e.g. exogenous that contribute to the projections made."

In response, it is noted first and that the actual and projected sales volumes in Harvard Graphics are not themselves assets. Moreover, nothing in Harvard Graphics suggests a data value that comprises "a measure of a tendency of a value of an asset [or even a tendency of sales volumes] to change as a result of a change in a data value for an exogenous variable," as recited in the present claim. In fact, the Examiner has not even asserted that it does.

For these additional reasons, claim 2 is believed to be allowable over the applied art.

#### **Group 4 Claim**

Claim 3 depends from claim 2 (in Group 3) and recites the further limitation that the estimated data values are displayed in a bar graph that includes a separate bar for each asset. This additional feature of the invention is not disclosed or suggested by the applied art.

In this regard, the Examiner asserts that Harvard Graphics' bar graph "includes a separate bar for each asset shown one per actual bar of the year on the chart of page 11-33." It is not clear what the statement means. However, the subject bar graph in Harvard Graphics merely includes a pair of bars (a bar for projected sales and a bar for actual sales) for each year in the period covered. This is significantly different than including a separate bar for each asset.

For these additional reasons, claim 3 is believed to be allowable over the applied art.

#### **Group 5 Claim**

Claim 4 depends from claim 3 (in Group 4) and recites the further limitation that each bar is displayed at an intensity level that is a function of the calculated measure of statistical significance of the measure of the tendency of the value of the asset corresponding to said bar to change. This additional feature of the invention is not disclosed or suggested by the applied art.

As to this claim, the Examiner again merely refers to the chart on page 11-33 and asserts that such chart shows projected and actual sales volumes being displayed with different intensities. However, this says nothing at all about the statistical significance of a measure of the tendency of an asset value to change based on a change in an

exogenous variable, as presently recited. Moreover, the Examiner has not alleged that Harvard Graphics suggests such a feature.

For these additional reasons, claim 4 is believed to be allowable over the applied art.

#### **Group 6 Claim**

Claim 5 depends from claim 4 (in Group 5) and recites the further limitation that the height of each bar is a second function of the measure of the tendency of the value of the asset to change as a result of a change in the data value for the exogenous variable. This additional feature of the invention is not disclosed or suggested by the applied art.

The Examiner simply asserts that the chart on Harvard Graphics' page 11-33 teaches this feature, without any explanation as to how. In fact, in that chart height simply represents projected or actual sales volume. It has nothing whatsoever to do with a function of the measure of the tendency of an asset value to change as a result of a change in the data value for an exogenous variable.

For these additional reasons, claim 5 is believed to be allowable over the applied art.

#### **Group 7 Claims**

Claim 10 depends from claim 1 (in Group 1) and recites the further limitation that the calculated measure of statistical significance is an estimate of a probability that an actual value for such estimated data value is outside of a specified confidence interval around an estimated value for the estimated data value. This additional feature of the invention is not disclosed or suggested by the applied art.

The Examiner asserts that page 11-33 of Harvard Graphics discloses this feature of the invention because “the projected sales and the actual sales fall outside of each other by some margin which in this case is in units of millions of dollars.” Appellants do not understand what this statement means. However, it appears to say nothing at all about an estimate of a probability that an actual value for an estimated data value is outside of a specified confidence interval around an estimated value for the estimated data value, as presently recited.

For these additional reasons, claim 10, together with its dependent claim 11, is believed to be allowable over the applied art.

#### **Group 8 Claim**

Claim 13 depends from claim 12 (in Group 2) and recites the further limitation that the display characteristic, which is a function of the calculated measure of statistical significance, is a size of a data point displayed for the estimated data value. This additional feature of the invention is not disclosed or suggested by the applied art.

As to this feature of the invention, the Examiner simply points to page 11-33 of Harvard Graphics, noting that each bar has a different size. However, the Examiner has not even alleged that Harvard Graphics’ bar size is a function of any calculated measure of statistical significance. Rather, bar size in Harvard Graphics’ graph is simply an indication of projected or actual sales volume.

For these additional reasons, claim 13 is believed to be allowable over the applied art.

**Group 9 Claim**

Claim 14 depends from claim 12 (in Group 2) and recites the further limitation that the display characteristic, which is a function of the calculated measure of statistical significance, is a hue at which the estimated data value is displayed. This additional feature of the invention is not disclosed or suggested by the applied art.

As to this feature of the invention, the Examiner simply states in a conclusory fashion that Harvard Graphics "teaches hue...where the series are in color or grayscale." However, the Examiner has not even alleged that Harvard Graphics teaches that hue is a function of any calculated measure of statistical significance, and Appellants are unable to find any indication that this is the case.

For these additional reasons, claim 14 is believed to be allowable over the applied art.

**Group 10 Claim**

Claim 15 depends from claim 12 (in Group 2) and recites the further limitation that the display characteristic, which is a function of the calculated measure of statistical significance, is a saturation at which said estimated data value is displayed. This additional feature of the invention is not disclosed or suggested by the applied art.

As to this feature of the invention, the Examiner simply states in a conclusory fashion that Harvard Graphics "teaches...saturation...where the series are in color or grayscale." However, the Examiner has not even alleged that Harvard Graphics teaches that saturation is a function of any calculated measure of statistical significance, and Appellants are unable to find any indication that this is the case.

For these additional reasons, claim 15 is believed to be allowable over the applied art.

**Group 11 Claim**

Claim 16 depends from claim 12 (in Group 2) and recites the further limitation that the display characteristic, which is a function of the calculated measure of statistical significance, is a brightness at which said estimated data value is displayed. This additional feature of the invention is not disclosed or suggested by the applied art.

As to this feature of the invention, the Examiner simply states in a conclusory fashion that Harvard Graphics "teaches...brightness...where the series are in color or grayscale." However, the Examiner has not even alleged that Harvard Graphics teaches that brightness is a function of any calculated measure of statistical significance, and Appellants are unable to find any indication that this is the case.

For these additional reasons, claim 16 is believed to be allowable over the applied art.

**Group 12 Claim**

Claim 17 depends from claim 12 (in Group 2) and recites the further limitation that the display characteristic, which is a function of the calculated measure of statistical significance, is a color characteristic with which said estimated data value is displayed. This additional feature of the invention is not disclosed or suggested by the applied art.

As to this feature of the invention, the Examiner simply states in a conclusory fashion that Harvard Graphics "teaches...color characteristics...where the series are in color or grayscale." However, the Examiner has not even alleged that Harvard Graphics teaches that any displayed color characteristic is a function of any calculated

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measure of statistical significance, and Appellants are unable to find any indication that this is the case.

For these additional reasons, claim 17 is believed to be allowable over the applied art.

### **IX. CONCLUDING REMARKS**

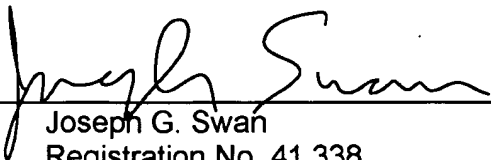
As Appellants have shown above, for a number of reasons, nothing in the applied references discloses, teaches, or suggests the invention recited by the claims on appeal. Appellants therefore respectfully submit that the claimed invention is patentably distinct over the applied art.

In view of the foregoing remarks, Appellants respectfully request that the rejection of claims 1 to 22 be reversed and a Notice of Allowance issued.

Respectfully submitted,

**MITCHELL, SILBERBERG & KNUPP LLP**

Dated: July 28, 2004

By   
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## APPENDIX A

### Claims on Appeal

1. A method for displaying information, said method comprising:
  - obtaining a plurality of estimated data values;
  - obtaining a calculated measure of statistical significance for each said estimated data value; and
  - displaying a graph of said plurality of estimated data values,wherein each said estimated data value is displayed at an intensity level that is a function of the calculated measure of statistical significance for said estimated data value.
2. A method according to Claim 1, wherein each said estimated data value pertains to an asset and comprises a measure of a tendency of a value of the asset to change as a result of a change in a data value for an exogenous variable.
3. A method according to Claim 2, wherein said estimated data values are displayed in a bar graph that includes a separate bar for each asset.
4. A method according to Claim 3, wherein each said bar is displayed at an intensity level that is a function of the calculated measure of statistical significance of the measure of the tendency of the value of the asset corresponding to said bar to change.

5. A method according to Claim 4, wherein a height of each said bar is a second function of the measure of the tendency of the value of the asset to change as a result of a change in the data value for the exogenous variable.

6. A method according to Claim 1, wherein each said estimated data value was estimated using a regression equation, and wherein the calculated measure of statistical significance is a p value that was calculated from the regression equation.

7. A method according to Claim 1, wherein the function is linear.

8. A method according to Claim 1, wherein the function is non-linear.

9. A method according to Claim 1, wherein each said estimated data value is displayed as a bar in a bar graph.

10. A method according to Claim 1, wherein said calculated measure of statistical significance is an estimate of a probability that an actual value for said estimated data value is outside of a specified confidence interval around an estimated value for said estimated data value.

11. A method according to Claim 10, wherein calculation of the intensity for each said estimated data value comprises determining 1 minus said estimate of said probability.

12. A method for displaying information, said method comprising:  
obtaining a plurality of estimated data values;  
obtaining a calculated measure of statistical significance for each said estimated data value; and  
displaying a graph of said plurality of estimated data values,  
wherein a display characteristic of each said estimated data value is a function of the calculated measure of statistical significance for said estimated data value.

13. A method according to Claim 12, wherein said display characteristic is a size of a data point displayed for said estimated data value.

14. A method according to Claim 12, wherein said display characteristic is a hue at which said estimated data value is displayed.

15. A method according to Claim 12, wherein said display characteristic is a saturation at which said estimated data value is displayed.

16. A method according to Claim 12, wherein said display characteristic is a brightness at which said estimated data value is displayed.

17. A method according to Claim 12, wherein said display characteristic is a color characteristic with which said estimated data value is displayed.

18. A method according to Claim 1, wherein each said estimated data value is displayed as a bar in a bar graph.

19. An apparatus for displaying information, said apparatus comprising:  
means for obtaining a plurality of estimated data values;  
means for obtaining a calculated measure of statistical significance for each said estimated data value; and  
means for displaying a graph of said plurality of estimated data values,  
wherein each said estimated data value is displayed at an intensity level that is a function of the calculated measure of statistical significance for said estimated data value.

20. An apparatus for displaying information, said apparatus comprising:  
means for obtaining a plurality of estimated data values;  
means for obtaining a calculated measure of statistical significance for each said estimated data value; and  
means for displaying a graph of said plurality of estimated data values,  
wherein a display characteristic of each said estimated data value is a function of the calculated measure of statistical significance for said estimated data value.

21. A computer-readable medium storing computer-executable process steps for displaying information, said process steps comprising steps to:

obtain a plurality of estimated data values;  
obtain a calculated measure of statistical significance for each said estimated data value; and  
display a graph of said plurality of estimated data values,  
wherein each said estimated data value is displayed at an intensity level that is a function of the calculated measure of statistical significance for said estimated data value.

22. A computer-readable medium storing computer-executable process steps for displaying information, said process steps comprising steps to:

obtain a plurality of estimated data values;  
obtain a calculated measure of statistical significance for each said estimated data value; and  
display a graph of said plurality of estimated data values,  
wherein a display characteristic of each said estimated data value is a function of the calculated measure of statistical significance for said estimated data value.